
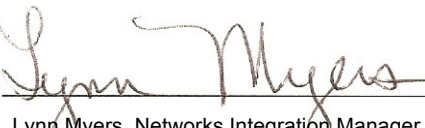


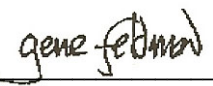

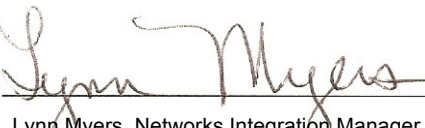


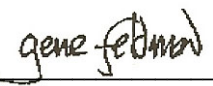

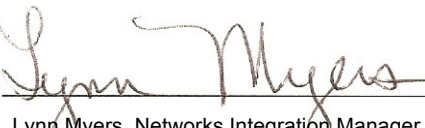


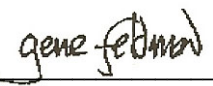


Goddard Space Flight CenterExploration & Space Communications Projects Division, Code 450
Greenbelt, Maryland 20771**450-PSLA-SAC-D**Expiration Date: September 30, 2015
(301) 286-6343

SAC-D Project Service Level Agreement	FY11 Operating Year Agreement <input checked="" type="checkbox"/> Final Agreement <input type="checkbox"/> Preliminary (Pending Budget Approval)										
Mission Type <input checked="" type="checkbox"/> NASA <input type="checkbox"/> Reimbursable	Future Year Planning for <input checked="" type="checkbox"/> FY12 – FY16										
<p align="center">NASA Exploration and Space Communications Projects Division Project Service Level Agreement Approved by:</p> <table border="0"> <tr> <td data-bbox="186 758 370 814">Project/Mission Manager</td> <td data-bbox="435 667 1409 890">  Date <u>Dec. 9th, 2010</u> Daniel Caruso, SAC-D Program Manager International Projects Office, the Comisión Nacional de Actividades Espaciales Project Office for the SAC-D Mission Telephone: +54-11-4331-0074 ext. 208; E-mail: caruso@conae.gov.ar </td> </tr> <tr> <td data-bbox="186 961 370 1045">GSFC Networks Integration Manager</td> <td data-bbox="435 919 1409 1121">  Date <u>9/23/2010</u> Lynn Myers, Networks Integration Manager, Networks Integration Management Office, Code 450.1 Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-6343; E-mail: c.l.myers@nasa.gov </td> </tr> <tr> <td data-bbox="186 1192 370 1249">Flight Dynamics Facility</td> <td data-bbox="435 1171 1409 1344">  Date <u>11/4/10</u> Susan L. Hoge, Flight Dynamics Facility Operations Director Navigation and Mission Design Branch, Code 595 Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-3661; E-mail: Susan.L.Hoge@nasa.gov </td> </tr> <tr> <td data-bbox="186 1381 370 1438">NISN Service Manager</td> <td data-bbox="435 1360 1409 1543">  Date <u>09/16/2010</u> Gerald R. Zgonc, NISN Service Manager Code 731, NASA Integrated Service Network Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-7160; E-mail: Gerald.R.Zgonc@nasa.gov </td> </tr> <tr> <td data-bbox="186 1619 370 1675">Aquarius Data Systems Manager</td> <td data-bbox="435 1591 1409 1774">  Date <u>15 September 2010</u> Dr. Gene Carl Feldman, Aquarius Data Systems Manager Earth Sciences Division, Code 610.2 Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-9428; E-mail: Gene.C.Feldman@nasa.gov </td> </tr> </table>		Project/Mission Manager	 Date <u>Dec. 9th, 2010</u> Daniel Caruso, SAC-D Program Manager International Projects Office, the Comisión Nacional de Actividades Espaciales Project Office for the SAC-D Mission Telephone: +54-11-4331-0074 ext. 208; E-mail: caruso@conae.gov.ar	GSFC Networks Integration Manager	 Date <u>9/23/2010</u> Lynn Myers, Networks Integration Manager, Networks Integration Management Office, Code 450.1 Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-6343; E-mail: c.l.myers@nasa.gov	Flight Dynamics Facility	 Date <u>11/4/10</u> Susan L. Hoge, Flight Dynamics Facility Operations Director Navigation and Mission Design Branch, Code 595 Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-3661; E-mail: Susan.L.Hoge@nasa.gov	NISN Service Manager	 Date <u>09/16/2010</u> Gerald R. Zgonc, NISN Service Manager Code 731, NASA Integrated Service Network Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-7160; E-mail: Gerald.R.Zgonc@nasa.gov	Aquarius Data Systems Manager	 Date <u>15 September 2010</u> Dr. Gene Carl Feldman, Aquarius Data Systems Manager Earth Sciences Division, Code 610.2 Goddard Space Flight Center, Greenbelt, MD 20771 Telephone: (301) 286-9428; E-mail: Gene.C.Feldman@nasa.gov
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PSLA HISTORY LOG

Issue	Effective Date	Expiration Date	Description of Changes
FY08 CCR 451/072	10/01/07	09/30/13	FY08 PSLA
FY11 CCR 450.1/000647	10/01/10	09/30/15	FY11 PSLA. Change document number.

PURPOSE

This Project Service Level Agreement (PSLA) describes space communications and data system requirements within the scope of services provided by the NASA Exploration and Space Communications Projects Division (ESC), whether actually performed by NASA, the customer project, or other sources. The primary purpose of a PSLA is to:

- Define the high level requirements for services to be provided.
- Identify any development required to augment standard services.
- Identify funding responsibilities.

The contents in this PSLA will be reviewed, updated, and approved/signed as deemed necessary by the Networks Integration Manager (NIM) and Mission Commitment Engineer (MCE).

This document is under configuration management of the GSFC Networks Integration Management Office (NIMO), Code 450.1, and Configuration Control Board (CCB).

Proposed changes to this document shall be submitted to the Code 450.1 CCB along with supportive material justifying the proposed change.

Changes to this document will be made by complete revision.

Comments or questions concerning this document, and proposed changes, may be addressed to:

Attention: Networks Integration Manager
Exploration and Space Communications Projects Division
Networks Integration Management Office/Code 450.1
Goddard Space Flight Center Greenbelt, MD 20771
Telephone: (301) 286-6343

ACRONYMS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
ASF	Alaska Satellite Facility	NASA	National Aeronautics and Space Administration
CCB	Configuration Control Board	NEN	Near Earth Network
CCR	Configuration Change Request	NENSO	Near Earth Network Scheduling Office
CONAE	Comision Nacional de Actividades Espaciales	NGIN	Next Generation Integrated Network
CTV	Compatibility Test Van	NIM	Networks Integration Manager
DSMC	Data Services Management Center	NIMO	Networks Integration Management Office
ESC	Exploration and Space Communications Projects Division	NISN	NASA Integrated Services Network
ETC	Cordoba Ground Station	NOM	Network Operations Manager
ETE	End-to-End	NOSP	Network Operations Support Plan
FDF	Flight Dynamics Facility	NRD	Network Requirements Document
FOR	Flight Operations Review	OD	Orbit Determination
FY	Fiscal Year	POC	Point of Contact
GPS	Global Positioning System	PSLA	Project Service Level Agreement
GSFC	Goddard Space Flight Center	psu	Practical Salinity Unit
ICD	Interface Control Document	RF	Radio Frequency
IIRV	Improved Interrange Vector	RFICD	Radio Frequency Interface Control Document
IP	Internet Protocol	RLV	Re-usable Launch Vehicle
I&T	Integration and Test	SAC-D	Satélite de Aplicaciones Cientificas-D
LEO	Low-Earth Orbit	SFTP	Secure File Transfer Protocol
LEOP	Launch and Early Orbit Phase	SG1	Svalbard Ground Station, Norway
LV	Launch Vehicle	SN	Space Network
MCE	Mission Commitment Engineer	SSS	Sea Surface Salinity
MGS	McMurdo Ground Station	TBD	To Be Determined
MOA/MOU	Memorandum of Agreement/ Memorandum of Understanding	TLE	Two Line Element
MOC	Mission Operations Center, located at Cordoba, Argentina	USSTRATCOM	United States Strategic Command
MORR	Mission Operations Readiness Review	UTDF	Universal Tracking Data Format
MSFC	Marshall Space Flight Center	VAFB	Vandenberg Air Force Base
N/A	Not Applicable	WAN	Wide Area Network

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SECTION A. CUSTOMER INFORMATION

Project/Mission Full Name: Satélite de Aplicaciones Cientificas-D

Acronym or Short Title: SAC-D

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NISN Customer Service Representative

Heather Kobin
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Category/Sponsor:

NASA

- ☐ Aeronautics Research Mission Directorate (formerly Code R)
☐ Exploration Systems Mission Directorate (formerly Code T)
☒ Science Mission Directorate (formerly Code S, Code U, or Code Y)
☐ Space Operations Mission Directorate (formerly Code M)
☐ Other _____
☒ Cooperative with Comision Nacional de Actividades Espaciales (CONAE)

Reimbursable

Non-NASA U. S. Government ☐ _____

U.S. Commercial Space Launch Act ☐ _____

Non-NASA Foreign ☐ _____

Other ☐ _____

Mission Objectives:

The SAC-D mission is a partnership between the National Aeronautics and Space Administration (NASA) and CONAE, the Argentine space agency, to plan, develop, collect, and return science data from an Earth-orbiting system.

Aquarius is one of eight payloads on the SAC-D Spacecraft. Aquarius, built and operated by NASA, is the primary instrument on SAC-D. The Aquarius Payload will make pioneering space-based measurements of Sea Surface Salinity (SSS) to characterize salinity variation and investigate the linkage between ocean circulation, the Earth's water cycle, and climate variability. The Project will generate global salinity maps accurate to 0.2 psu on a monthly basis.

Launch/Flight Information:

☐ Space Shuttle LV
☒ Expendable LV

☐ Aircraft
☐ Balloon

☐ RLV
☐ Spacecraft

Specify: Vehicle Delta II 7320-10C Upper Stage _____

Launch Vehicle Customer/Sponsor: _____

Launch Site: Vandenberg Air Force Base (VAFB)

Operations Site: Cordoba, Argentina

Trajectory Regime Description: Low-Earth Orbit (LEO)

Launch/Flight Date(s): April 1, 2011

Orbit/Flight Path
Data:

Check all that apply:

- | | | |
|---|---|--|
| <input type="checkbox"/> Aeroflight | <input type="checkbox"/> High-Earth Orbit | <input type="checkbox"/> Suborbital |
| <input type="checkbox"/> Deep Space | <input checked="" type="checkbox"/> Low-Earth Orbit | <input type="checkbox"/> Selenocentric |
| <input type="checkbox"/> Heliocentric | <input type="checkbox"/> Formation-Flyer | |
| <input type="checkbox"/> Multi-spacecraft constellation _____ | | |
| <input type="checkbox"/> LaGrange Point _____ | | |
| <input type="checkbox"/> Other _____ | | |

Orbital Parameters:

Apogee: 657 km Perigee: 657 km Inclination: 98.01 degrees

Other Trajectory Information: 6 pm ascending nodal crossing

Key Mission Events and Dates: SAC-D commissioning (complete): May 1, 2011,
Aquarius commissioning (complete): May 16, 2011

Launch and/or Mission Critical Support Items: Near Earth Network (NEN), Cordoba Ground Station (ETC), FDF, NASA
Integrated Services Network (NISN)

Formulation Phase Start Date: 10/1/2003

Implementation Phase Start Date: 8/1/2005

Does this support involve transfer of funds from a non-NASA entity: ☐ Yes ☒ No

Present Phase of Development: Implementation

Requirements Maturity Assessment: ☒ >80% ☐ >50% ☐ <50%

Committed Support from 04/01/2011 to L+3 years (use L plus xx for pre-launch versions)

Potential Support Extension until L+ 5 years (use L plus xx for pre-launch versions)

Mission/Spacecraft Maximum Estimated Lifetime: Launch plus 5 years

Mission/Spacecraft Lifetime Limiting Factor: ☐ Orbit Degradation
☐ Radiation Degradation
☒ Onboard Consumables
☐ Replacement by Follow-On Mission
☐ Other. Explain: _____

Frequency Authorization Managed by: CONAE

Other: The Goddard Space Flight Center (GSFC) is the lead NASA center and is providing the Aquarius instrument. CONAE is providing the Spacecraft (SAC-D) and operations control.

SECTION B.

CUSTOMER REQUIREMENTS AND STANDARD SERVICES

B.1 GSFC NETWORKS/DATA SERVICES

The Exploration and Space Communications Projects Division (ESC) (Code 450.1) will provide telecommunications service for the Satélite de Aplicaciones Científicas-D (SAC-D) Mission utilizing the Near Earth Network (NEN) (formerly NGN).

B.1.1 Near Earth Network Services

The SAC-D will use the Cordoba Ground Station (ETC) in Argentina, as the primary command and control site. The NEN, Svalbard, Norway (SG1); Fairbanks, Alaska Satellite Facility (ASF); McMurdo Ground Station, Antarctica (MGS); and Wallops Island, Virginia (WGS), will be used to provide real-time spacecraft command, housekeeping telemetry, and tracking services during Launch and Early Orbit Phase (LEOP), emergencies, calibrations, and maneuvers service. Telemetry and command rates will be 4 kbps. All telemetry will be recorded on site and saved for 30 days. Upon request, recorded data will be routed to the Mission Operations Center (MOC) in Cordoba, Argentina.

B.1.1.1 Customer Requirements

Operational service will accommodate both the monthly maneuvers and calibrations that will be scheduled as needed. For maneuvers, five contacts are expected for each maneuver. For calibrations, two contacts are expected per calibration.

Services can be broken down into the following phases:

1. LEOP. The postlaunch checkout of the SAC-D Spacecraft and Payload will proceed in three stages. The requirements for NEN service differ with each stage as follows:
 - a. NEN-Stage 1 – Launch Day to Launch + 2 days. NEN services are required for all available passes with a 5-minute minimum.
 - b. NEN-Stage 2 – From Launch + 3 days to Launch + 24 days. This will be a period of spacecraft checkout. NEN services are required for one pass per orbit.
 - c. NEN-Stage 3 – From Launch +25 days to Launch + 45 days. This will be a period of initial activation and checkout of the instruments. NEN services are required for all available passes with a 5-minute minimum.

NOTE

On or about November 15, 2010, MGS will be closed for maintenance for approximately 4 months.

2. On-orbit Operations. After the LEOP and Checkout activities are complete, the spacecraft will transition to routine operations. The routine operations period will consist of two regular activities, contingency services, and proficiency services.

NOTE: Proficiency passes are required to guarantee services.

- a. Cold Sky Calibration. Two passes per Cold Sky maneuver (a pitch maneuver of the SAC-D Spacecraft; pitch forward to 180 degrees, hold, and pitch back). One pass would be prior to the calibration and the other following the calibration. Cold sky maneuvers will be executed monthly.
- b. Orbit maneuvers. Five passes per Orbit Maneuver. There will be one maneuver per month.
- c. Contingency Services. To be scheduled as needed (i.e., One pass/orbit).
- d. Proficiency Services. To be scheduled (i.e., One pass/month) during any month where no other service is scheduled.

B.1.1.2 Services Provided

- a. NEN Data Acquisition

The NEN will provide S-band command and telemetry service for the critical events, (i.e., Cold Sky Calibration and the Orbit Maneuvers). In the event neither maneuver is performed during a calendar month then a station proficiency pass will be scheduled for each NEN station.

b. NEN Data Formatting and Transfer

Command and telemetry data will be transported between the MOC and the NASA ground sites in Internet Protocol (IP) by NASA Integrated Services Network (NISN).

c. NEN Commanding

NEN commanding may be performed during any contact that is scheduled and executed.

d. NEN Tracking

Tracking services will be required for the first 60 days for the Flight Dynamics Facility (FDF) services.

Tracking data will include angles and Doppler in Universal Tracking Data Format (UTDF). Tracking data will be provided to the MOC postpass via the Secure File Transfer Protocol (SFTP).

NOTE: MGS does not provide tracking data.

e. NEN Scheduling

The MOC will exchange schedule information with the Data Systems Management Center (DSMC)/ Near Earth Network Scheduling Office (NENSO).

f. NEN Ephemeris Data

Launch to L+60 days. NENSO will use Improved Interrange Vectors (IIRV) provided by FDF for all ephemeris data sent to the ground stations.

After L+60 days:

Prime. NENSO will use Two Line Elements (TLE) provided by MOC for all ephemeris data sent to the ground station.

Backup. NENSO will use TLEs provided by the United States Strategic Command (USSTRATCOM) (Space Track) bulletin board for all ephemeris data sent to the ground stations.

NOTE: Because USSTRATCOM (Space Track) does not guarantee the timeliness of the information on their bulletin board, all NEN services relying on TLEs are on a "best effort" basis.

g. Summary Data

(1) NEN Mission Phase Requirements

Refer to Table B-1.

B.1.2 Space Network Services – Not Applicable

B.1.3 Customer Integration and Test

a. Customer Requirements

SAC-D requires confirmation of compatibility with the NEN services. SAC-D will perform an extensive test plan to exercise the Network.

The main objectives of the testing are to demonstrate compatibility among the Network's S-band Radio Frequency (RF) equipment, demonstrate data flow starting in the MOC with sequences and real-time commands and telemetry, demonstrate the ability of the MOC to develop a 2-week sequence during the nominal timeline, and exercise Launch operations with all external agencies involved.

Table B-1. NEN Mission Phase Requirements

Phase	Period (e.g., L+30 days)	No. of Contacts Required (Min. /Max.) (per day)	Contact Duration Required (Min. /Max.) (minutes)	Total Contact Time (minutes per day)
-------	-----------------------------	---	---	--

Testing	As required	As required	As required	
LEOP Stage 1	48 hours	2 days x 14~ orbits/day x 3 contacts/orbit	5/10 mins	420
Ops Checkout & LEOP Stage 2	L+3 days to L+24 days	22 days x 14~ orbits/day x 1 contact/orbit	10 mins	140
Ops Checkout & LEOP Stage 3	L+25 days to L+45 days	21 days x 14~ orbits/day x 2.4 contacts/orbit	5/10 mins	336
Proficiency	Life of Mission	As required	As required	
Contingency	Life of Mission	As required	As required	
Maneuvers	1 per month	5 contacts	10 mins	50
Cold Sky Calibrations	1 per month	2 contacts (1 contact before maneuver, 1 contact after)	15 mins	30
End of Mission	L+5 years	As required	As required	

NOTE: Stages may be extended in case of any delay during LEOP up to L+60 days.

b. Services Provided

The Network Operations Manager (NOM) will conduct Integration and Test (I&T) activity. The NOM will provide a test plan that will verify the ground stations operational readiness status for SAC-D service. The test plan will assure proper documentation is available to identify all the NEN requirements, identify all NEN parameters required to configure the NEN for SAC-D service, and assure that the NEN systems are fully tested to the extent possible, and function in an operational environment. The NOM will identify and document all discrepancies.

c. ESC Requirements

The ESC requires validation of the interfaces between the SAC-D platform and ground systems and the resources. This validation includes RF Compatibility testing, Data Flow testing, and End-to-End (ETE) testing. Every attempt is made to accommodate ESC requirements within the customer's test programs. Table B-2 provides the initial schedule of test events.

Table B-2. Customer Integration and Test

Test Event	Date
Compatibility Test Van (CTV)	December 2009
Connectivity and Data Flow Testing	January 2010
ETE Testing	March 2010 to June 2010
Weekly Proficiency Tests	July 2010 to Launch
Mission Dress Rehearsal	April 2011 (due to slip)

B.1.4 Satellite Laser Ranging Services – Not Applicable

B.1.5 Radio Frequency Interface Control Document

The RF interface control requirements are described in the *Radio Frequency Interface Control Document (RFICD) between SAC-D Mission and the Ground Network (GN)*, 450-RFICD-SAC-D/GN.

B.2 DEEP SPACE NETWORK SERVICES – NOT APPLICABLE

B.3 FLIGHT DYNAMICS SERVICES

The FDF will provide Orbit Determination (OD), Launch, and definitive orbit solution data for the SAC-D Spacecraft. The Goddard Space Flight Center (GSFC) organization is the Navigation and Mission Design Branch (Code 595).

B.3.1 Customer Requirements

During LEOP operations, FDF will provide trajectory and orbit analysis, orbit prediction, and definitive orbit solution data for use in Global Positioning System (GPS) calibration. FDF will receive and process all SAC-D tracking data from NEN resources, including NEN angle data and Doppler data. FDF service is required for a period of 60 days following Launch.

B.3.2 Services Provided

FDF products will include:

- OD services during the first 60 days of on-orbit activity, including acquisition of tracking data from ground stations, production of predicted ephemeris data sets, and distribution of ephemeris data to NENSO.
- Launch day ephemeris updates based on OD, which are typically done at separation +3 and separation +5 hours (depending on the Launch day tracking profile).
- OD services include generating a definitive state vector using tracking data from selected sites based on pre-launch analysis of the solution accuracy versus tracking; it will be Comision Nacional de Actividades Espaciales (CONAE) task to compare the GPS state vector to the FDF solution and to calculate the bias in their GPS measurement.

B.4 NASA INTEGRATED SERVICES NETWORK SERVICES

For SAC-D, NISN provides data and voice services between the elements of the NEN and the customer's facilities. NISN is managed from Marshall Space Flight Center (MSFC), with an organization at GSFC for the Mission Network services provided to their customers. Refer to Tables B-3 and B-4.

Table B-3. SAC-D Circuits

Service ID	Service Title	Service Unit Description	Units FY07	Units FY08	Units FY09	Units FY10	Units FY11	Units FY12	Units FY13	Units FY14
2.7.5.02.SACD.001.U	International Service, Cordoba Argentina-GSFC, 64 kbps- USER FUNDED	Service Rate/Month	1	12	12	12	12	12	12	12

Table B-4. Summary of WAN Services

Source Document	Site A (From)	Site B (To)	Protocol	Data Rate (kbps)	Start Date	Stop Date	Technical POC	Service Title	Units
PSLA	Cordoba, Argentina	GSFC	IP/ Voice	64	08/2007	07/2014	TBS	Data/ Voice	12

SECTION C. REQUIREMENTS FOR NON-NASA SERVICES – NOT APPLICABLE

SECTION D. SERVICE AND SCHEDULE SUMMARY

D.1 FUNDING RESPONSIBILITY

All customers are responsible for the costs to generate the RFICD. The Aquarius Project at GSFC funded the RFICD.

For SAC-D, the ESC data services will be funded by NASA.

The customer will coordinate with FDF to pay for FDF services.

NISN, through their Operating Plan, provides for core services. For SAC-D, the NISN customer-unique costs are funded by the Aquarius Project at GSFC.

D.2 ESTIMATED SERVICES FOR FUTURE YEARS (FY12 – FY16)

For planning purposes only, Table D-1 estimates the projection for operations service requirements in future years.

Table D-1. Estimated Services for FY12 – FY16

Service Title	Unit Description	Service Projections					
		Current Year (FY11)	FY12	FY13	FY14	FY15	FY16
Launch & Early Orbit	Contact	84	0	0	0	0	0
Ops Checkout & LEOP	Contact	1014	0	0	0	0	0
Maneuvers	Contact	30	60	60	60	60	60
Calibrations	Contact	12	24	24	24	24	24
FDF: • Ephemeris Updates • Orbit Determination	Data Products	60	0	0	0	0	0
NISN	Month	12	12	12	12	12	12

D.2.1 Customer's Master Schedule

Refer to Appendix A for customer's master schedule.

D.2.2 NIMO Summary Schedule

Refer to Appendix B for NIMO summary schedule.

D.2.3 Customer Deliverables

Task	Due Date
Confirmation Letter	April 27, 2005

Mission Operations Peer Review	July 15, 2005
Mission CDR	July 21, 2008
Integration Test Readiness Review	June 25 to July 3, 2007
Flight Operations Review (FOR)	February 10, 2010
Operational Readiness Review (ORR)	December 6, 2010

SECTION E. PROJECTED DOCUMENTATION SET

- ☒ Memorandum of Agreement/Memorandum of Understanding (MOA/MOU)
Memorandum of Understanding Between the National Aeronautics and Space Administration of the United States of America and The Comision Nacional de Actividades Espaciales of the Republic of Argentina for Cooperation on the Aquarius/SAC-D Mission, 450-AGMT-0081; <https://code450ngin.gsfc.nasa.gov/>
- ☒ Radio Frequency Interface Control Document
Radio Frequency Interface Control Document (RFICD) Between SAC-D (Satélite de Aplicaciones Cientificas) and the Ground Network (GN), 450-RFICD-SAC-D/GN; <https://code450ngin.gsfc.nasa.gov/>
- ☐ Interface Control Document (ICD)
- ☒ Network Requirements Document (NRD)
Satellite de Aplicaciones Cientificas-D (SAC-D) Network Requirements Document, 450-NRD-SAC-D; <https://code450ngin.gsfc.nasa.gov/>
- ☒ Network Operations Support Plan (NOSP)
- ☒ Mission Operations Readiness Review (MORR)
- ☒ Other
Network Test Plan for the Satellite de Aplicaciones Cientificas-D (SAC-D) Mission, NENS-CCE-NTP-0273; <https://code450ngin.gsfc.nasa.gov/>

Reference Documents:

Near Earth Network Users Guide (NENUG), 453-NENUG; <http://esc.gsfc.nasa.gov>
Data Services Management Center Operations Interface Procedure, 450-OIP-DSMC; <https://code450ngin.gsfc.nasa.gov/>
Configuration Management Freeze Policy for the Integrated Networks and Supporting Elements, 451-CMFP-Integrated Networks/Supporting Elements; <https://code450ngin.gsfc.nasa.gov/>